concrete heating panels has started. Pipes of 38-mm-diameter are manufactured using the Danner tube-drawing process. The glass pipes are increasingly used in chemical plants, the food industry, and may also be used for water conduits and for irrigation purposes. There is 1 figure and 2 tables.

ASSOCIATION: Buchanskiy steklotarnyy zavod (Bucha Glass Container Plant)

VOYEVODSKIY, Sergey Alekseyevich, inzh.; KHASKIN, Abram Mikhaylovich, inzh.; KRASNITS, Zyama Yakovlevich, inzh.; ALENICHEVA, Ye.A., inzh., retsenzent; ZHAVORONKOVA, N.N., inzh., retsenzent; KYUN, S.A., kand. tekhn. nauk, retsenzent; PUCHKO, N.F., inzh., retsenzent; UMANOV, I.I., inzh., retsenzent; LEUTA, V.I., inzh., retsenzent

[Course in mechanical drawing for correspondence technical schools] Kurs cherchcniia dlia zaochnykh tekhnikumov. Kiev, Tekhnika. Pt.2. 1965. 319 p. (MIRA 18:8)

KUGUKALO, I.A.[Kuhukalo, I.A.], kand. ekon. nauk; KORETSKIY, L.M. [Korets'kyi, L.M.]; LIPSKIY, V.M.[Lips'kyi, V.M.]; KOSTENKO, N.K.; SHKURATOV, O.I.; LINCHEVSKAYA, V.O. [Linchevs'ka, V.O.]; DAVIDENKO, O.P.[Davydenko, O.P.]; VOLOBOY, P.V.; PUCHKO, Yu.S.; KONSEVICH, A.I.[Konsevych, A.I.]; KOPACHINSKAYA, N.I.[Kopachyns'ka, N.I.]; LANDYSH, B.O., red.; DAKHNO, Yu.B., tekhn. red.

[Trends in the specialization and comprehensive development of the Kiev Administrative Economic Region]Napriamy spetsializatsii i kompleksnoho rozvytku Kyivs'koho ekonomichnoho administratyvnoho raionu. Kyiv, Vyd-vo Akad. nauk URSR, 1962. 308 p. (MIRA 16:3)

1. Akademiya nauk URSR, Kiev. Instytut ekonomiky.
(Kiev Economic Region—Industries)

KULAKOV, M.V.; SHKATOV, Ye.F.; PUCHKOV, A.A.; KHANBERG, V.A.

Computer for processing the differential chromatograms of C_1--C_5 fractions. Mash. i neft. obor. no.9:30-31 '64.
(MIRA 17:11)

1. Moskovskiy institut khimicheskogo mashinostroyeniya, Yaroslavskiy nauchno-issledovatel'skiy institut manometrov i Yaroslavskiy tekhnologicheskiy institut.

PUCHKOV, A.A.; KHANBERG, V.A.; SHKATOV, Ye.F.

Signum transducer with the EPP-109 amplifier. Priborostroenie no.10:26 O '64. (MIRA 17:11)

PUCHKOV, A.

United States - Iron and Steel Workers

How do iron and steel workers live in the U.S. V pom. profaktivu 14, No. 6, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

1. PUCHKOV, A.

2. USSR (600)

4. Iron and Steel Workers-United States

7. How do iron and steel workers live in the U. S. V pom. profaktivu 14 no. 6, 1953

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

PUCHKOV, A., inzh.

Devices used for testing jacks. Avt.transp. 35 no.11:31 N '57. (MIRA 10:10)

(Lifting jacks--Testing)

PUCHKOV, A., inzhener.

Devices for checking hydraulic actuators for brake systems. Avt. transp. 35 no.5:35 My '57. (MLRA 10:6)

(Automobiles--Brakes)

Economic Conditions

Two worlds on two ways to economic development, V pom. profaktivu 13, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952, Unclassified.

BUZNIK, V.M.; PUCHKOV, A.F., redaktor; KLIMINA, Ye.V., redaktor; KONTOROVICH, A.I., tekhnicheskiy redaktor.

[Designing marine steam boilers] Proektirovanie sudovykh parovykh kotlov. [Leningrad] Gos. izd-vo sudostroit. lit-ry, 1951. 331 p.
(Steam boilers, Marine) (MLRA 8:2)

L 24003-66 EWP(f)/T-2/ETC(m)-6 WW

ACC NR: AP6009925 (N) SOURCE CODE: UR/0413/66/000/004/0119/0119

AUTHOR: Grodziyevskiy, V. I.; Kel'shteyn, D. M.; Puchkov, A. I.

ORG: none

TITLE: A guide vane assembly for a radial centripetal turbine. Class 46, No. 179128

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 119

TOPIC TAGS: centripetal flow turbine, guide vane, gas turbine

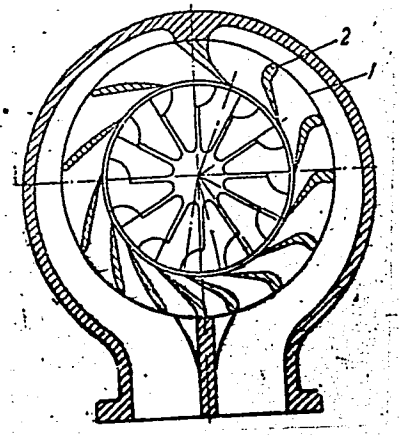
ABSTRACT: This Author's Certificate introduces a guide vane assembly for a radial centripetal turbine with guide vanes which vary in profile. The stream of gases at the outlet is equalized by mounting the vanes with variable spacing which gradually increases along the path of the gas stream.

UDC: 621.438—155—226.31

Card 1/2

L 24003-66

ACC NR: AP6009925



1--guide vane assembly; 2--guide vanes

SUB CODE: 21/ SUBM DATE: 09Feb65/ ORIG REF: 000/ OTH REF: 000

Card 2/2

PUCHKOV, A.I., otv. za vypusk; VASIL'YEVA, N.N., tekhn. red.

[Regulations governing the acceptance and use of automatic block system devices, electrical and dispatcher control interlocking systems] Pravila priemki v ekspluatatsiiu ustroistv avtoblokirovki, elektricheskoi i dispercheskoi tsentralizatsii. Moskva, Transzheldorizdat, 1963. 30 p. (MIRA 16:10)

1. Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya. (Railroads--Signaling--Centralized traffic control)

PUCHKOV, A.M.

KOVUN, P.K., NEVZOROV, A.P., ANTONENKO, G.P.,; BUDINA,L.V.; VORONINA, Ye.P.; GUSEV, P.I.: YELAGIN, M.N., ZHURAVLEV, M.A., ZALOZNYY, K.D.: KOMKOV,V.N.; KOROBOV, A.S.;KORCHAGIN, V.N.; LAVROV, V.N.; LAPSHINA, O.V.; LUTIKOV,I.Ye., MAKEVNIN, A.Ya.;MOROZOVA, F.I.;NEVZOROV, A.P.;PONOMARCHUK, M.K.;PUCHKOV, A.M.; RAZMOLOGOVA, A.M.;RUBIN, S.M.; SELEZNEVA, O.V.;SEMENOVA, F.I.; SPIRIDONOVA, A.I.;SUSHCHEVSKIY, M.G.;USOV, M.P.; TARKOVSKIY, M.I.; CHENYKAYEVA, Ye.A.;SHENDRIKOV, G.L.; SHUL'GIN, G.T.;TSITSIN, N.V.,akademik, redaktor;REVENKOVA, A.I.,redaktor; KHOKHRINA, N.M., khudozhestvennyy redaktor; VESKOVA, Ye.I., tekhnicheskiy redaktor; PEVZNERV.B.I., tekhnicheskiy redaktor.

[Plant breeding at the 1955 All-Union Agricultureal Exhibition] Rastenievodstvo na Vsesoiuznoi sel'skokhoziaistvennoi vystavke 1955 goda. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1956. 687 p. (MLRA 10:4)
(Moscow--Plant breeding--Exhibitions)

PUCHKOV, A. M.

27410 PUCHKOV, A. M., TODYCYSKIY, I. I. - Torzhestvo Michurinskikh Idey. (K 20-Letiyu Vsesoyuz. Akad. S.-Kh. Nauk Im. V. I. Lenina). Nauka I Zhizn', 1949, No. 7, s. 31-36.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

PUCHKOV, A. M. i PODVOYSKIY, I. I.

27210

Torzhestvo Michurinskikh Idey. (K. 20-Letiyu. Vsesoyuz. Akad. S.-Ka. Nauk Im. V. I. Lenina). Nauka I. Zhizn', 1949, No. 7, S. 31-36

2. MEKHANIZATSIYA I ELEKTRIFIKATSIYA. MTS.

SO: LETOPIS NO 34

PUSHKOV, A. N.; PODVOYSKIY, I.I.

"Triumph of Michurin's Theories, "Nauka I Zhisn',
No. 7, 1949.

R. Podovyskiy, I. I.

ZHAMIN, V.A., prof.; GLUKHAREV, L.I., kand. ekonom. nauk; PUCHKOV, A.N., dotsent, kand. ekonom. nauk; FAMINSKIY, I.P.; KURAKIN, N.A., kand. ekonom. nauk; IVANOV, N.N., kand. ekonom. nauk; SMIRNOV, G.V., dotsent, kand. ekonom. nauk; VASIL'KOV, N.P., kand. ekonom. nauk; VASIL'KOV, N.P., kand. ekonom. nauk; LUK'YANOVA, M.I., prof., doktor ekonom. nauk; OZIRA, V.Yu., red.; LAZAREVA, L.V., tekhn. red.

[Characteristics of developing industrial production in capitalist countries] Osobennosti razvitiia promyshlennogo proizvodstva v kapitalisticheskikh stranakh. Pod red. V.A.Zhamina. Moskva, Izd-vo Mosk. univ., 1961. 239 p. (MIRA 15:2)

1. Moscow. Universitet. Ekonomicheskiy fakul'tet. Kafedra ekonomiki zarubezhnykh stran.

(Industry)

PUCKOV, A.S.

Organization of first aid in Moscow. Cesk. nemoc. 19 no.8-10:144-146 Oct-Dec 1951. (CLML 23:2)

PUCHKOV, Aleksandr Sergeyevich, doktor med.nauk, zasluzhennyy vrach RSFSR [deceased]; CHERNOVSKIY, I.P.; NECHAYEV, A.M., obshchiy red.; OSTROVSKAYA, L.S., red.; ZUYEVA, N.K., tekhn.red.

[Organization of first aid in Moscow] Organizatsiia skoroi meditsinskoi pomoshchi v Moskve. Izd.2. Perer. i dop. L.P. Chervonskogo. Otshchaie red. A.M.Nechaeva. Moskva, Gos.izd-vo med.lit-ry, 1959. 139 p. (MIRA 12:5)
(MOSCOW--AMBULANCE SERVICE)

18.1215,18.7100

77592
SOV/129-60-2-5/13

AUTHORS: Rakhshtadt, A. G., Rogel'berg, I. L. (Candidates of Technical Sciences), Vorob'yeva, L. P., Puchkov, B. I. (Engineers)

TITLE: Effect of Heat Treatment on Properties and Structure of Beryllium Bronze

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 2, pp 20-31 (USSR)

ABSTRACT: Beryllium bronze possesses elastic properties, high corrosion resistance, and adequate electric conductivity. It is used for the elastic elements of instruments and devices. Inasmuch as previous works failed to study the elastic properties of this bronze, the authors investigated elastic and relaxation properties of the bronze prepared in the form of thin strip. The modulus of elasticity was determined by the dynamic method according to the frequency of resonant-type vibration of a cantilever

Card 1/10

specimen. Elastic limit was determined by means of longitudinal bending of the specimen according to the method described in Rakhshtadt, A. G., and Shtremel', M. A., Collection MVTU imeni Bauman, Physical Metallurgy and Heat Treatment, Mashgiz, 1955. Residual elongation of the external fiber was calculated by formulas of Ye. P. Popov (Popov, Ye. P., Theory and Calculation of Flexible Elastic Parts, Publishing House LKVVIA, 1947). Permissible residual deformation in determining elastic limit amounted to 0.001 to 0.01%. Relaxation characteristic was determined on the strip bend around mandrels of various diameters. The following types of bronze were investigated: (1) Br B2 (Be, 2.07; Ni, 0.2%); (2) Br B2.5 (Be, 2.56; Ni, 0.31%); (3) Br BNT (Be, 1.9 to 2.02; Ni, 0.32; T, 0.19%). For this purpose, 10-kg ingots 40 mm thick were hot-rolled at 600-800° C into 4.5 mm thick strip with maximal reduction of 20-30%

per pass. Rolled strip was hardened from 800° C (holding time 1 hr and water quenching). After pickling, specimens were cold-rolled and hardened according to the above rates at strip thicknesses of 3, 1.5, and 0.7 mm. Then, the strip was rolled to 0.6, 0.43, 0.33, and 0.30 mm thickness. Subsequently, the specimens were hardened in water from 780 to 790° C and rolled to an identical thickness of 0.3 mm; i.e., with reductions of 50, 30, and 10% and without deformation. Hardening from 780 to 790° C (holding for 10 min and water-cooling at 20° C) was done, since such heating brings about a sufficient concentration of beryllium in alpha-solution and fine grain structure (10-15 μ grains). Mechanical and physical properties of the above bronze specimens corresponded to those given in literature for bronzes containing 2 and 2.5% Be. Figure 2 shows changes of elastic properties, hardness, and electrical resistance of bronze Br B2.5 under the effect of tempering. Similar figures are given in the paper for the other two types of bronze.

Effect of Heat Treatment on Properties and Structure of Beryllium Bronze

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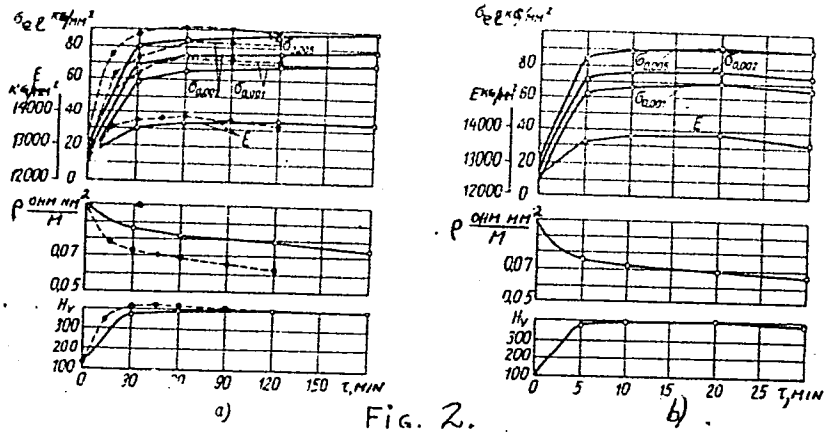

Fig. 2.

See Card 5/10 for caption.

Card 4/10

Caption to Fig. 2 on Card 4/ 10

Fig. 2. Change of elastic properties, hardness, and electrical resistance of beryllium bronze Br B2.5 after tempering. (a) ——— at 320° C; ------ at 350° C; (b) at 370° C. σ_{el}, elastic limit; E, modulus of elasticity; ρ, electrical resistance, $\frac{ohm \cdot mm^2}{m}$; H_v, Vickers hardness; subscripts at $\sigma_{0.005}$, $\sigma_{0.002}$, $\sigma_{0.01}$, residual deformation.

Bronze Br BNT 1.9 has a higher elastic limit than the other two types of bronze. It also exceeds that indicated in Richards, J., Materials and Methods, Vol 31, Nr 4, 1950, and in some Soviet references. This may be ascribed not only to a different method of investiga-

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tion but also to the use of thin strip with a highly homogeneous structure. The rate of relaxation at the initial stress equal to elastic limit (at $\sigma_{0.005}$) is higher after tempering at 320° C for 3 hours than that after tempering at 350° C for 1 hour or at 370° C for 20 minutes (see Fig. 7).

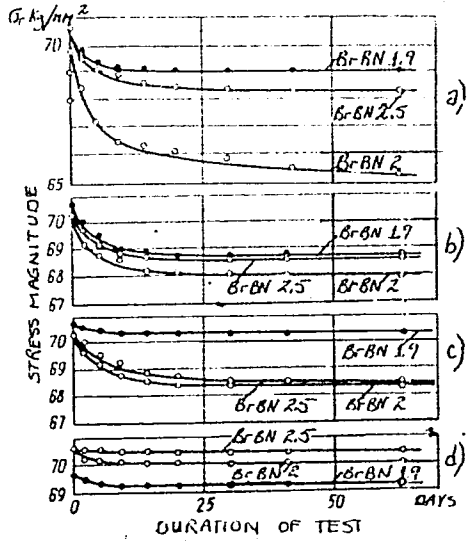

Fig. 7. Change of stresses as the result of relaxation of beryllium bronze at 20° C after hardening and tempering. (a) 320° C, 3 hr; (b) 350° C, 1 hr; (c) 370° C, 20 min; (d) 350° C after reduction of 30%.

Effect of Heat Treatment on Properties and Structure of Beryllium Bronze

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Plastic deformation following hardening strengthens the bronze and increases its elastic limit and hardness, but affects the modulus of elasticity only slightly (see Fig. 9).

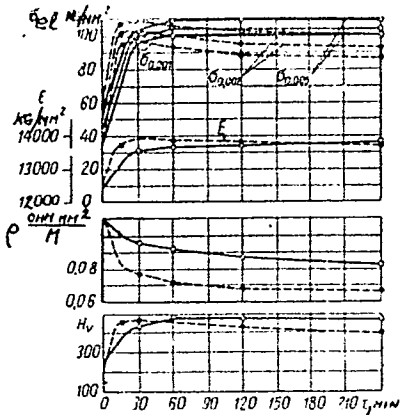

Fig. 9. Change of elastic properties, hardness, and electrical resistance of beryllium bronze Br 2.5 after hardening, cold plastic deformation (reduction 30%), and tempering: ——— at 300° C; ---- at 350° C.

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Effect of Heat Treatment on Properties and Structure of Beryllium Bronze

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As a result of this study the following conclusions have been made: (1) heat treatment and plastic deformation drastically affect elastic properties and structure of beryllium bronze; (2) tempering at 350-370° C increases elastic limit and modulus of elasticity of hardened bronze which reaches its maximum with a holding time of 1 hour at 350° C and 20 minutes at 370° C; (3) bronzes containing 2 or 2.5% Be behave identically in regard to strengthening. Additions of Ti bring about a futher increase of the elastic limit; (4) bronzes with 2.5 and, particularly, with 2% Be are characterized by nonuniform microscopic decomposition in tempering with higher rates of decomposition along grain boundaries; (5) deformation of hardened bronze changes the state of initially hardened solid solution only with high reduction (30 and 50%); (6) tempering of hardened beryllium bronze subjected to plastic deformation promotes the value of elastic limit ($\sigma_{0.001}$ =

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Effect of Heat Treatment on Properties and Structure of Beryllium Bronze

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100 kg/mm^2). There are 10 figures; - tables; and 38 references, 22 Soviet, 12 U.S., 2 German, 1 U.K., 1 French. The 5 most recent U.S. and U.K. references are: Kelly, A., Acta Metallurgica, Nr 8, 1958; Richards, J., ASTM, Spec. Tech. Publication, Nr 129, 1952; Richards, J., Materials and Methods, Vol 31, Nr 4, 1950; Beck, P., Journ. Appl. Physics, Vol 20, Nr 7, 1949; Friedel, J., Phil. Magazine, Vol 44, Nr 351, 1953.

ASSOCIATION: Moscow Higher Technical School imeni Bauman (MVTU imeni Baumana), State Design and Planning Scientific Research Institute for Working of Nonferrous Metals (Giprotsvetmetobrabotka)

Card 10/10

ROGEL'BERG, I.L.; SHPICHINETSKIY, Ye.S.; BARANOVA, L.M.; PUCHKOV, B.I.

Technology of manufacturing and properties of nickel-tungsten alloys in connection with their use for the manufacture of filamentary-cathode tubes. Trudy Giprotsvetmetobrabotka no.18:233-242 '60. (MIRA 13:10)

(Nickel-tungsten alloys) (Electron tubes)

Puchkov, B.I.

82444

S/149/60/000/004/008/009

1P. 1220

AUTHORS: Puchkov, B.I., Rakhshtadt, A.G., Rogel'berg, I.L.

TITLE: Investigation Into Relaxation of Copper Alloys for Springs

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1960, No. 4, pp. 145-152

TEXT: Information is given on results of investigations into the relaxation of stress of basic copper alloy grades, used for the manufacture of springs. The authors tested 0.3-mm thick strips of the following materials: aluminum bronze БрА7 and БрАМц9-2 (BrA7 and BrAMts 9-2); tin bronze БрОФ6.5-0.15 (BrOF 6.5-0.15), БрОФ4-0.25 (BrOF 4-0.25), БрОЦ4-3 (BrOTs 4-3); brass Л85, Л68, Л62 (L85, L68, L62); German silver МНЦ15-20 (MNTs 15-20); manganese silicide bronze БрКМц 3-1 (BrKMts 3-1); berryllium bronze БрБ2 (BrB2) and copper-nickel-manganese alloy МНМц20-20 (MNMts 20-20). The method of bending thin flat specimens was employed to determine the relaxation tests. The method of mechanical tensometry was employed to determine the decrease in stress, caused by relaxation, from changes in the radius of curvature of the specimens after holding them at a given temperature for a given time. The relaxable stress was calculated by the following formula:

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S/149/60/000/004/008/009

Investigation Into Relaxation of Copper Alloys for Springs

$$\tau_r = \frac{Eh}{2}\left(\frac{1}{R} - \frac{1}{r}\right)$$

where E is the modulus of normal elasticity, kg/mm^2; h is the thickness of the strip, mm; R is the initial radius of curvature, mm; r is the radius of curvature of the strip after relaxation. The relaxation of stress was studied depending on the temperature (200-350°C); the degree of preliminary cold deformation; the magnitude of initial stress and the sense of the specimen cut-out in respect to the sense of rolling. The magnitude of initial stress, approaching the elastic limit, was calculated by the extrapolation method. The following results were obtained: In alloys strengthened by deformation the highest relaxation stability was observed at 200-350°C in MNTs 15-20, BrAMts 9-2, BrKMts 3-1 and BrOTs 4-3; in the group of alloys strengthened by heat treatment highest relaxation stability at 250°C was revealed in the MnMts 20-20 alloy, exceeding that of beryllium bronze, which showed high relaxation stability up to 200°C. For alloys strengthened by hard facing, the relaxation process, occurring at temperatures below the beginning of recrystallization, may be described by the relation $\sigma_\tau = \sigma_0 - K \lg \tau$; The relaxation rate increases noticeably after the temperature of recrystallization has been attained. The magnitude of the relaxation stress decreases and the relaxation rate increase with a higher degree of preliminary cold deformation. For alloys

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Investigation Into Relaxation of Copper Alloys for Springs

strengthened by heat treatment, the dependence of the $\sigma_\tau = \sigma_0 - K \lg \tau$ type is applicable up to temperatures corresponding to the preservation of the initial structural state. Slight hot hard facing increases the relaxation stability. This is of considerable practical interest. There are 7 sets of graphs, 2 tables and 13 Soviet references.

ASSOCIATION: Vsesoyuznyy zaochnyy politekhnicheskiy institut (All Union Polytechnic Institute of Correspondence Courses) Kafedra metallovedeniya i termicheskoy obrabotki metallov (Department of Metal Science and Thermal Treatment of Metals)

SUBMITTED: September 15, 1959

Card 3/3

Puchkov B.I.

82647

18.1220 18.7500 S/126/60/010/02/019/020
E021/E306

AUTHORS: Puchkov, B.I. and Rozenberg, I.L.

TITLE: The Reasons for the Strengthening of Aluminium Bronze During Recovery

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 10, No. 2, pp 302 - 305

TEXT: Experiments were carried out on aluminium bronze (7.1% Al). Ingots, made from high-purity materials, were rolled, first hot and then cold, to a thickness of 0.3 mm with intermediate heat treatments. The degree of cold working was 50%, with the final rolling produced in 4 or 27 passes. Samples were cut from the strip and the elastic limit was determined by the bending method of Rakhshtadt and Shtremel' (Ref. 10). The specimens were heated at 280 °C (below the recrystallisation temperature) for 5-60 min. Fig. 1 shows the diagram for deformation where residual deformation is the x-axis and the total deformation the y-axis. This shows the increase in elastic limit brought about by a low temperature anneal (the top two curves). It also shows that there is a difference between the samples rolled with 4 and 27 passes. The

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The Reasons for the Strengthening of Aluminium Bronze During Recovery

samples after the 4 passes have a higher elastic limit but the difference decreases with the annealing treatment. Fig. 2 shows the effect of time on the elastic limit. Samples cut in various directions in relation to the rolling direction show that the strip is anisotropic in properties. Fig. 3 shows the anisotropy in diagrammatic form. With a sub-recrystallisation annealing treatment, the anisotropy disappears. The results can be explained if macroscopic residual stresses exist in the rolled strip. These are relaxed by the annealing treatment and the "true" elastic limit of the deformed material is measured. Thus, the change in elastic limit during recovery occurs because of redistribution of the microstresses. There are 3 figures and 12 references: 1 English and 11 Soviet.

ASSOCIATION: Giprotsvetmetobrabotka

SUBMITTED: January 14, 1960

Card 2/2

PUCHKOV, B.I.; ROGEL'BERG, I.L.

Causes of aluminum bronze hardening under the effect of relaxation. Fiz. met. i metalloved. 10 no.2:302-305 Ag '60. (MIRA 13:9)

1. Giprotsvetmetobrabotka.
(Aluminum bronze--Heat treatment)

S/680/61/000/020/007/0
D258/D302

AUTHORS: Rogel'berg, I. L., Shpichinetskiy, Ye. S., Puchkov, B.I. and Titova, A. S.

TITLE: Nickel alloys of high electrical resistivity for cathode filament bases in radio tubes

SOURCE: Moscow. Gosudarstvennyy nauchno-issledovatel'skiy i proektnyy institut obrabotki tsvetnykh metallov. Sbornik nauchnykh trudov, no. 20, 1961, Metallovedeniye i obrabotka tsvetnykh metallov i splavov, 117-124

TEXT: The present work was aimed at developing Ni alloys suitable for the manufacture of filament bases in the so-called 'economical' radio tubes. Suitable alloys were required to possess electrical resistivities, of 42 microohms-cm at room temperature and of 114 microohm-cm (at least) at 850°C. 84 different alloys were prepared by quickly melting the charges in a high-frequency furnace. The products were subsequently reduced with C and Mg, poured in graphite forms, water-quenched from 1100°C, then rolled, annealed at

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D258/D302

Nickel alloys of ...

800 - 850°C and finally drawn, with softening, into 0.5 mm and 2 mm wires. After a heat-treatment at 800°C, the wires were tested for tensile strength (on 2 mm wire, at room temperature and at 850°C) and electrical resistivity (on 0.5 mm wire, at 20 - 950°C). The resistivity at high temperatures was measured under a pressure of 10^{-4} mmHg on electrically heated sample spirals, 5 mm in diameter, made from 1-meter wires. The following systems were investigated: Ni-Co; Ni-Fe (with up to 8% Fe); Ni-Ti; Ni-Fe-Ti; Ni-Co-Ti; Ni-Co-Fe-Ti, with and without additions of either Al, Si, Mg or Mo; and Ni-Fe (with 40 to 50% Fe) with small amounts of either Ti, Al or Si. Only the last series was found to satisfy both electrical and mechanical requirements. A survey of the other systems showed that the electrical resistivity of Ni at high temperatures is greatly enhanced by the addition of up to 5% Ti; the addition of Mo enhances the low-temperature resistivity only. The Ni-Fe-Ti alloys are recommended for use in cathode bases, in view of their good electro-resistivity and mechanical strength and also because of

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D258/D302

Nickel alloys of ...

their marked plasticity. There are 3 figures, 2 tables and 2 Soviet-bloc references.

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88287
S/032/61/027/001/025/037
B017/B054

1.9600

AUTHORS: Geveling, N. N., Puchkov, B. I., Rakhshtadt, A. G., and Rogel'berg, I. L.

TITLE: Device for Measuring the Relaxation of Stress in Thin Metal Tapes on Bending

PERIODICAL: Zavodskaya laboratoriya, 1961, Vol. 27, No. 1, pp. 89-91

TEXT: To study the relaxation of stress in thin metal tapes made of spring alloys, the tapes were attached to cylindrical frame by means of two ledges. The magnitude of initial stress depends on the frame diameter and thickness of the metal tape. The relaxation stress is calculated from the equation $\sigma_r = 0.5\ E\ h\ (\frac{1}{R} - \frac{1}{r})$, where E = modulus of elasticity, h = thickness of the metal tape, R = initial radius of the arc, and r = arc radius after relaxation. The kinetics of the relaxation stress was studied with beryllium bronze. There are 3 figures and 5 Soviet references.

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88287

Devices for Measuring the Relaxation of Stress in Thin Metal Tapes on Bending

S/032/61/027/001/025/037
B017/B054

ASSOCIATION: Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana (Moscow Higher Technical School imeni Bauman), Giprotsvetmetobrabotka (State Design and Planning Scientific Research Institute for the Processing of Nonferrous Metals)

Card 2/2

33467
S/129/62/000/001/010/011
E193/E383

18.1220

AUTHORS: Rakhshtadt, A.G., Rogel'berg, I.L., Candidates of Technical Sciences and Puchkov, B.I., Sveshnikova, G.A., Engineers

TITLE: A study of methods of increasing the strength of copper-base spring alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1962, 45 - 56

TEXT: The object of the investigation described in the present paper was to carry out a systematic study of the effect of mechanical and thermal treatment on the mechanical properties of several copper-base alloys. These included: Л85 (L85) (84.67% Cu, remainder Zn); Л80 (L80) (79.18% Cu, remainder Zn); Л68 (L68) (67.26% Cu, remainder Zn); Бр.ОФ6.5-0.15 (Br.OF6.5-0.15) (6.4% Sn, 0.20% P); Бр.ОФ 4-0.25 (Br.OF4-0.25) (3.56% Sn, 0.28% P); Бр.ОЦ 4-3 (Br.OTs4-3) (3.94% Sn, 3.1% Zn); Бр.А7 (Br.A7) (7.63% Al); Бр.КМц3-1 (Br.KMts3-1) (2.82% Si, 1.15% Mn); МНЦ 15-20 (MNTs15-20)

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A study of methods of ....

(65.19% Cu, 14.75% Ni, remainder Zn). The alloys were melted in an induction furnace and the ingots, after two hot-rolling operations, were cold-rolled with intermediate anneals, the last anneal being carried out on sheet 1.5 mm thick. This was cold-rolled to the final thickness of 0.75, 0.5 or 0.375 mm. The mechanical properties were measured both on cold-rolled material and on specimens subsequently heat-treated. All the tests were carried out two months after the completion of thermal and mechanical treatment. The results can be summarized as follows. 1) Cold plastic deformation increases the hardness, elastic limit, elastic modulus and electrical resistance of all the alloys studied; this effect increases with increasing degree of cold-working and is associated with an increase in the dislocation density, formation of stacking faults and a change in the atomic structure of the alloys. Regarding the effect of alloying additions on the work-hardening characteristic of copper, tin has been found to be more effective than aluminium, silicon or zinc.

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2) An additional increase in the mechanical properties, affected by cold plastic deformation, can be obtained by a low-temperature treatment carried out below the recrystallization temperature. The higher the degree of work-hardening, the more pronounced is the effect of this treatment. The changes brought about by cold-working alone or combined with low-temperature annealing are exemplified by the results obtained on aluminium bronze (alloy A7). These are reproduced in Fig. 1б, where the increment of the elastic modulus ($\triangle E$, kg/mm^2), elastic limit (σ_{upr}, kg/mm^2), Vickers hardness (HV) and electrical resistivity (ρ, $\Omega mm^2/m$) are plotted against the degree of cold deformation (%) without and with subsequent low-temperature annealing (continuous and broken curves, respectively); instead of the true elastic limit, the values of 0.002, 0.005 and 0.01% proof stress ($\sigma_{0.002}$, $\sigma_{0.005}$ and $\sigma_{0.1}$, respectively) are plotted. The increase in the elastic limit brought about by low-temperature annealing can be attributed to the resultant

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relief of localized stresses, elimination of point defects, diffusion processes associated with atomic displacements, and redistribution of dislocations.

3) All the alloys studied in work-hardened condition are anisotropic in respect of their elastic properties. This effect is evidently associated with anisotropic distribution of dislocations on the active slip systems. Since the increase in the elastic limit brought about by low-temperature annealing is not the same in all directions, anisotropy of elastic properties in material subjected to this treatment is practically non-existent. This is demonstrated in Fig. 2, showing the magnitude of $\sigma_{0.005}$ (kg/mm^2) in various directions, the vertical and horizontal directions corresponding to directions parallel and normal to the direction of rolling; graph a relates to specimens cold-worked to 60% reduction, graph б to specimens subsequently annealed under optimum conditions, as shown in Table 3; Curves 1 - 4 relate to 1 - L68, 2 - Br.OF6.5-0.15, 3 - Br.KMts3-1 and 4 - MNTs 15-20.

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4) None of the alloys studied is in a stable condition after plastic deformation. Brasses, in particular, if loaded under conditions of stress different from those obtaining during the initial cold-working operation, suffer a decrease in strength. This effect is attributed to the destruction of atomic segregation brought about by the first plastic-deformation process.

5) The low-temperature treatment of work-hardened specimens of the alloys studied does not significantly increase their resistance to heavy plastic deformation, which indicates that the combined mechanical and thermal treatment does not bring about effective blocking of dislocations. It is for this reason that a sharp decrease in the elastic limit of brass and bronze A7 is produced when, after plastic deformation followed by low-temperature annealing, they are again plastically deformed even to a very small degree. Consequently, parts made of these alloys and treated in the manner described should not be stressed in service beyond the elastic limit.

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6) Low-temperature treatment of work-hardened alloys increases their relaxation stability. This is demonstrated by the relaxation (stress σ_r, kg/mm^2 versus time, hours) curves reproduced in Fig. 4 for a - L68, б - L80, в - L85, г - Br.OF4-0.25, д - Br.OF4-3, е - Br.OF6.5-0.15, ж - Br.A7, з - Br.KMts 3-1, и - MNTs15-20, Curves 1 relating to specimens cold-rolled to 60% reduction and Curves 2 to specimens subsequently annealed according to the schedules shown in Table 3. In addition, low-temperature treatment increases the stability of elastic properties of the alloys under conditions of cyclic loading. For instance, in the case of a cold-rolled specimen of MNTs alloy, subjected to 10^5 cycles under a stress of 22.8 kg/mm^2, the relaxation stress decreased after 360 hours from 57.5 to 26.2 kg/mm^2; in the case of specimens which after cold-working were annealed at

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300 °C for 3 hours, the relaxation stress decreased under the same conditions to 38.0 kg/mm^2 only; the elastic limit decreased by 5% in the former and remained constant in the latter case. There are 9 figures, 3 tables and 36 references: 30 Soviet-bloc and 6 non-Soviet-bloc. The four latest English-language references mentioned are: Ref. 14: O. Izumi - Journal of the Japan Institute of Metals, v.23, 1959; Ref. 34: R. Feder, A. Novick, D.B. Rosenblat - Journal Appl. Phys., v.29, 1958; Ref. 35: Le-Claire, D., Lomer, M.M., Acta metallurgica, v.2, no. 11, 1954; Ref. 36: A. Cottrell, R.G. Stoks - Proc. Royal Soc., v.A233, 1955.

ASSOCIATIONS: MVTU im. Bauman
Giprotsvetmetobrabotka

Card 7/10

S/136/62/000/006/001/005
E073/E435

AUTHORS: Puchkov, B.I., Rakhshtadt, A.G., Rogel'berg, I.L.

TITLE: Anisotropy of the limit of elasticity of commercial copper spring alloys

PERIODICAL: Tsvetnyye metally, no.6, 1962, 67-70

TEXT: The results are given of measured values of anisotropy of the elasticity limit of 0.35 mm thick sheets of bronzes, brasses and German silver of the following compositions:
БР.А7 (Br.A7): 7.68% Al, 92.20% Cu, 0.05% Fe;
БР.ОЦ 4-3 (Br.OTs 4-3): 4.14% Sn, 3.02% Zn, 92.74% Cu, 0.02% Fe;
Л85 (L85): 14.96% Zn, 84.78% Cu, 0.04% Fe;
МНЦ65-15-20 (MNTs 65-15-20): 19.80% Zn, 15.10% Ni, 64.71% Cu, 0.08% Fe.

All the alloys were investigated after work hardening (rolling with a reduction of 57%) and after annealing at a temperature below the recrystallization temperature. The limit of elasticity was measured by cyclic loading during longitudinal bending. In the work hardened state there is a pronounced anisotropy of the limit of elasticity, the magnitude of which is much higher in the

Card 1/3

Anisotropy of the limit ...

direction transverse to rolling (σ'_{el}) than in the direction of rolling (σ''_{el}). The ratio $\sigma'_{el}/\sigma''_{el}$ varied between 1.10 and 1.90. The respective values of the ratio of the moduli of elasticity varied between 1.0 and 1.2; no correlation was detected between the limit of elasticity and the modulus of elasticity. After low (below recrystallization) temperature annealing the limit of elasticity of the investigated materials (with the exception of tin bronze) increased appreciably whereby the increase was greatest in the direction of rolling and least transverse to the direction of rolling. Thus, the anisotropy diminished after low temperature annealing. In the tin bronze, low temperature anncaling did not reduce the anisotropy of the limit of elasticity. Thus, low temperature annealing does not only improve the elastic properties of tinless bronzes, brasses and German silver but also reduces the anisotropy of their elastic properties. The authors attribute the anisotropy to the distribution of dislocations and the associated field of oriented microstress. The relatively small change in the anisotropy of the limit of elasticity of tin bronzes as a result of low temperature annealing is probably

Card 2/3

Anisotropy of the limit ...

caused by the extremely slow diffusion in copper-tin solid solutions. There are 4 figures and 1 table.

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S/126/62/013/005/013/031
E193/E483

AUTHORS: Puchkov, B.I., Rakhshtadt, A.G., Rogel'berg, I.L.

TITLE: A study of the effect of deformation and annealing on the anisotropy of the elastic limit of the 7% aluminium copper alloy

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962, 728-734

TEXT: In continuation of an earlier investigation carried out by B.I.Puchkov and I.L.Rogel'berg (FMM, v.10, 1960, 302) the present authors conducted a systematic study of anisotropy of the elastic limit (or, more precisely, of the 0.005% proof stress) of a copper-base alloy containing 7.1% Al, with particular reference to the effect of both plastic deformation and annealing temperature as well as the effect of repeated deformation and annealing. The experimental material was prepared by hot rolling 40 mm thick billets to 4 mm sheet which was then reduced cold to 0.35 mm with intermediate annealing at 700°C. The method described in Ref.4 (A.G.Rakhshtadt and

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M.A.Shtremel'. Zavodskaya laboratoriya, v.30, no.6, 1960, 744; Metallovedeniye i termicheskaya obrabotka metallov, sb.41, MVTU im. Baumana, 1955, 219) was used to determine $\sigma_{0.005}$ of specimens, cut from the cold-rolled sheet at an angle of 30, 45, 60 or 90° to the direction of rolling. The effect of the degree of plastic deformation (in rolling) on the anisotropy of the elastic limit is demonstrated in Fig.1 where $\sigma_{0.005}$ (kg/mm^2) is plotted as a function of the orientation of the test piece in relation to direction of rolling, the vertical and horizontal axes representing respectively, directions parallel and normal to the direction of rolling; the degree of plastic deformation is indicated by each curve. The effect of annealing temperature is demonstrated in Fig.3, where $\sigma_{0.005}$ (kg/mm^2) of specimens given 50% reduction is plotted against the annealing temperature (°C), curves 1 and 2 relating to values of $\sigma_{0.005}$ in the direction normal and parallel to the direction of rolling, respectively. The effect of some other factors on the anisotropy of the elastic limit is shown in Fig.7, where the vertical and horizontal axes represent again the directions

A study of the effect ...

parallel and normal to the direction of rolling and the various curves, showing the variation of $\sigma_{0.005}$, relate to specimens which had been given the following treatment: 1 - rolling to 50% reduction; 2 - rolling to 50% reduction followed by rolling in the transverse direction to 8% reduction; 3 - as in 2, plus 30 min at 280°C; 4 - rolling to 92% reduction; 5 - rolling to 92% reduction followed by rolling in the transverse direction to 8% reduction; 6 - as in 5, plus 30 min at 280°C. Several conclusions were reached. 1. The plastic deformation-induced structural changes, causing anisotropy of the elastic limit of the alloy studied, can be fully eliminated by annealing the material below the recrystallization temperature.
2. Anisotropy of the alloy annealed below the recrystallization temperature can be fully restored by light plastic deformation.
3. Anisotropy of plastically deformed material can be substantially altered by rolling the material in the direction normal to the direction of the first rolling operation, even if only a small reduction (7%) is given in the second rolling operation.
4. Work-hardening of the alloy studied is very non-uniform, and

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A study of the effect ...

even after very heavy reductions some of the slip system show no resistance to further deformation. The deformation- and annealing-induced changes in the anisotropy of the elastic limit of the 7% Al-Cu alloy are associated with a change in the magnitude and mode of distribution of oriented micro-stresses caused by redistribution of the dislocations.
There are 7 figures and 1 table.

ASSOCIATION: "Giprotsvetmetobrabotka" MVTU im. Baumana.

SUBMITTED: February 8, 1961 (initially)
December 11, 1961 (after revision)

Card 4/4

PUCHKOV, B.I.; RAKHSHTADT, A.G.; ROGEL'BERG, I.L.; prinimali uchastiye: ALIMARINA, G.A.; SOKOLOVA, I.M.

Anisotropy of the elasticity limit of industrial copper spring alloys. TSvet. met. 35 no.6:67-70 Je '62. (MIRA 15:6)
(Copper alloys--Testing) (Elasticity)

PUCHKOV, B.I.; RAKHSHTADT, A.G.; ROGEL'BERG, I.L.; SOKOLOVA, I.M.

Effect of plastic deformations and heat treatment on the anisotropy of beryllium bronze hardening and recovery. Issl. splav. tsvet. met. no.4:224-232 '63. (MIRA 16:8)

(Beryllium bronze--Hardening)
(Deformations (Mechanics))

L 19209-63 EWP(q)/EWT(m)/BDS AFFTC/ASD Pad JD/JG/WB/MLK(a)
ACCESSION NR: AP3007583 S/0286/63/000/010/0050/0050

AUTHOR: Shpichinetskiy, Ye. S.; Puchkov, B. I.

TITLE: High-conductivity copper-base alloy. Class 40, No. 154669

SOURCE: Byul. izobret. i tovarny*kh znakov, no. 10, 1963, 50.

TOPIC TAGS: high electrical conductivity alloy, copper base alloy, copper cadmium boron nickel alloy, high electrical conductivity copper base alloy

ABSTRACT: The patent introduces a high electrical conductivity copper-base alloy containing cadmium and boron. To increase ductility, 1.3—2.2% cadmium, 0.2 [sic; probably should be 0.02]—0.06% boron, and 0.15—0.5% nickel are added.

ASSOCIATION: none

SUBMITTED: 11Nov61 DATE ACQ: 140ct63 ENCL: 00

SUB CODE: ML NO REF SOV: 000 OTHER: 000

Card 1/1

PUCHKOV, B.I.; RAKHSHTADT, A.G.; ROGEL'BERG, I.L.

Characteristics of the hardening and recovery of nickel on the results of cold plastic deformation and annealing. Fiz. met. i metalloved. 16 no.5:781-786 N '63. (MIRA 17:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut obrabotki tsvetnykh metallov i Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana.

L 23846-65 EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/EPR/T/EWP(t)/EWP(b) Pad/Ps-4/Pu-4 IJP(c)
ACCESSION NR: AT4045671 JD/WW/HW/JG S/2680/64/000/022/0039/0061

AUTHOR: Agafonov, A. K.; Aleksakhin, I. A.; Pokrovskaya, G. N.; Puchkov, B. I.; Rogel'berg, I. L.; Tarasova, T. F.; Nuzhnov, A.G. (Deceased)

TITLE: Thermoelectromotive force of binary solid solutions on a Ni-base

SOURCE: Moscow. Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut splavov i obrabotki tsvetny*kh metallov. Trudy*, no. 22, 1964. Issledovaniye splavov dlya termopar (Studying alloys for thermocouples), 39-61

TOPIC TAGS: thermoelectromotive property, binary solid solution, nickel, aluminum, beryllium, cobalt, chromium, copper, iron, germanium, magnesium, manganese, molybdenum, niobium, rhenium, silicon, tantalum, titanium, vanadium, tungsten, zirconium, oxidation resistance

ABSTRACT: Many alloys used for the production of thermocouples have a Ni base and, therefore, their thermoelectric properties are of considerable interest. Ni alloys with Al, Be, Co, Cr, Cu, Fe, Ge, Mg, Mn, Mo, Nb, Re, Si, Ta, Ti,

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L 23846-65
ACCESSION NR: AT4045671

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V[27], W[27] and Zr[27] were tested. Specimens consisted of 300 g ingots having a diameter of 18 mm. An argon induction furnace was used and a magnesite crucible. Ingots with a low content of additives were cold-rolled into 5.3 mm rods and cold-roll specimens with a high content of the second component were subjected to intermediate quenching from 1200C. The rods were annealed for two hours at 1000C and the thermoelectromotive force measured within a temperature range of 0 to 1200C. Most tested elements enhanced the thermoelectromotive force of Ni and 15 to 17% Mo, 6.5% Co and 19 to 20% W had a conspicuous effect. Elevated temperature accelerated the effect and low temperature slowed it down considerably. The only exceptions were Al, Be and Cu: these elements lowered the thermoelectromotive force. Many systems displayed an extremum in solid solutions with Cr, Co, Al, Si, Co, etc. Orig. art. has: 36 figures and 3 tables

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut obrabotki tsvetnykh metallov, Moscow (State Scientific Research and Planning Institute for the Processing of Nonferrous Metals)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, EM

NR REF SOV: 008 OTHER: 009

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L 32262-65 EPF(n)-2/EPR/EPA(s)-2/EWT(m)/EPA(bb)-2/EWP(b)/EWA(d)/EWP(t) Ps-4/
Pt-10/Pu-4/Pad IJP(c) WW/JD/HW/JG/WB
ACCESSION NR: AT4045672 S/2680/64/000/022/0062/0071

AUTHOR: Nuzhnov, A.G. (Deceased); Pokrovskaya, G.N.; Puchkov, B.I.; Rogel'berg, L.L.; Tarasova, T.F.

TITLE: Thermoelectromotive force of binary solid solutions on a cobalt base

SOURCE: Moscow. Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut splavov i obrabotki tsvetny*kh metallov. Trudy*, no. 22, 1964. Issledovaniye splavov dlya termopar (Studying alloys for thermocouples), 62-71

TOPIC TAGS: cobalt, aluminum, beryllium, chromium, copper, iron, germanium, manganese, niobium, nickel, silicon, tantalum, titanium, vanadium, tungsten, molybdenum, zirconium, binary solid solution, thermoelectromotive force, cobalt based solution

ABSTRACT: The authors investigate the thermoelectromotive force of Cb solid solutions in the quest for alloys that would be suitable for the production of thermocouples. Specimens contained up to 4% Co and Al, 1.5% Be, 25% Cr, 5% Cu,

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L 32262-65

ACCESSION NR: AT4045672

40% Fe, 5% Ge, 40% Mn, 5% Nb, 10% Ni, 20% Re, 5% Si, 10% Ta, 6% Ti, 15% Va, 13% W, 10% Mo and 2% Zr. Testing temperatures varied between 100 and 1200 C. The changes in the thermoelectromotive force were found to become increasingly complex as the concentration of the dissolved component was increased and that accurate observations required the measurement of the thermoelectric properties in a state of equilibrium. With heightened concentration of the solid solution, the thermoelectromotive force was observed to decline. In Co alloys having low solubility components such as Cu, Zr and Be, the increased concentration of the alloying element brought about an initial decrease and subsequently a slight increase of the thermoelectromotive force. Only Co-Cr alloys containing over 20% Cr were found suitable for the positive electrode. These alloys possess a satisfactory thermoelectromotive force and earlier investigations show them to be sufficiently oxidation-resistant. Orig. art. has: 16 figures

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov, Moscow (State Scientific Research and Design Institute for Alloys and Processing of Nonferrous Metals)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 005

Card 2/2

L 32263-65 EPR/EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) Ps-4/Pad IJP(c) MJW/JD/HW

ACCESSION NR: AT4045674 S/2680/64/000/022/0115/0128

AUTHORS: Nuzhnov, A.G. (deceased); Pokrovskaya, G.N.; Puchkov, B.I.; Rogel'berg, I.L.; Tarasova, T.F.

TITLE: Investigation of the effect of composition on the thermoelectromotive force of an "NK" alloy

SOURCE: Moscow. Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut splavov i obrabotki tsvetny*kh metallov. Trudy*, no. 22, 1964. Issledovaniye splavov dlya termopar (Studying alloys for thermosouples), 115-128

TOPIC TAGS: alloy composition, NK alloy, Co, Mn, Al, Si, Ni, Fe, Mg, Cu, thermoelectromotive force

ABSTRACT: The investigated NK alloy contained 15 to 20% Co, approximately 2% Mn and Al, 1% Si and Ni. Serious difficulties arose in melting this alloy in industrial furnaces because of an inability to control its electromotive properties. The authors continued experiments on the basis of earlier findings. The effect of the basic components as well as of Fe, Cu and Mg was observed within the 100 to 1000 C range. Al and Si additions proved beneficial for

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L 32263-65
ACCESSION NR: AT4045674

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thermoelectromotive control of the specimens during melting while the Mn and Co content was maintained on an constant level. At high temperatures, an increase in the Co contents enhanced the thermoelectromotive force. The suggested optimal composition is 1.8 to 2.1% Al, 0.9 to 1.1% Si, 16.5 to 17.5% Co and 1.9 to 2.1% Mn. The orig. art. has: 13 figures and 2 tables.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov, Moscow (State Scientific Research and Design Institute for Alloys and Processing of Nonferrous Metals)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

2/2
Card

L 23848-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) Pad IJP(c) MJW/JD/HW/WB
ACCESSION NR: AT4045673 S/2680/64/000/022/0101/0114

AUTHOR: Nuzhnov, A. G. (Deceased); Pokrovskaya, G. N.; Puchkov, B. I.; Rogel'berg, I.L.; Tarasova, T. F.

TITLE: Investigation of Alumel and Chromel alloys with cobalt additions

SOURCE: Moscow. Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut splavov i obrabotki tsvetny*kh metallov. Trudy*, no. 22, 1964. Issledovaniye splavov dlya termopar (Studying alloys for thermocouples), 101-114

TOPIC TAGS: Chromel, Alumel, Co, Mn, Ni, Cr, oxidation resistance, thermal emf

ABSTRACT: The decline of the production of Chromel and Alumel couples in recent years initiated an investigation of the thermoelectromotive properties of these alloys with Co additions. The stability, oxidation rate and changes in the thermoelectromotive force under the effect of oxidation were observed in Ni(N-1), Cr(KhO), Si(Krl), Al(A00) and Mn(Mrl) alloy wire rods having a diameter of 3.2 and 1.2 mm. Co additions were found to lower the thermoelectromotive force of Chromel and Alumel, their thermoelectric properties becoming more linear and appproximating the norms set by State Standards (GOST) 1790-63. (see figs. 1 &

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L 23848-65
ACCESSION NR: AT4045673

2 of enclosure). Therefore, Co is a suitable regulator of the thermoelectric properties of both alloys. Oxidation resistance of Chromel and its working properties were substantially improved and those of Alumel to a lesser extent by Co additions. All specimens were endowed with improved stability and the thermoelectromotive force of couples approximated the norms set by State Standards 3044-61. Orig. art. has: 7 figures and 3 tables

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut obrabotki tsvetnykh metallov, Moscow (State Scientific Research and Planning Institute for the Processing of Nonferrous Metals)

SUBMITTED: 00 ENCL: 04 SUB CODE: MM, EM

NR REF SOV: 005 OTHER: 001

Card 2/6

L 23849-65 EWT(l)/EWG(k)/EWT(m)/EWA(d)/EPR/EWP(t)/EEC(b)-2/EWP(b) Pz-6/Pa-4
ACCESSION NR: AT4045675 LJP(c) MJW/JD/S/2680/64/000/022/0129/0142
AT

AUTHOR: Nuzhnov, A. G. (Deceased); Pokrovskaya, G. N.; Puchkov, B. I.; Rogel'berg, I. L.; Tarasova, T. F.

TITLE: Investigation of the effect of the composition of an "CA" alloy on the thermoelectromotive force

SOURCE: Moscow. Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut splavov i obrabotki tsvetny*kh metallov. Trudy*, no. 22, 1964. Issledovaniye splavov dlya termopar (Studying alloys for thermocouples), 129-142

TOPIC TAGS: aluminum, silicon, manganese, thermoelectromotive force

ABSTRACT: The effect of Si, Al and Mn on the thermoelectromotive force of the Alumel-type alloy "CA" was investigated. Unlike Alumel, the Al contents in the "CA" alloy is higher (up to 3.5%) and the Mn contents lower (less than 2%). All tests were conducted within a 100 to 1000C temperature range. All three components lowered the thermoelectromotive force of the tested alloy. The effect of Mn was found to be independent of the concentration of the two other components.

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L 23849-65
ACCESSION NR: AT4045675

An efficient adjustment of the electromotive force calls for the maintenance of an invariable Mn level of 1.4% during the melting of the alloy while Al and Si are added. The electromotive force rose sharply above 12 mv when Mn quantities were higher and the Si and Al contents was 1.1% and 3.3% respectively. As a rule, the Al contents in that alloy exceeds 2.8% and increasing concentrations lower the thermoelectromotive force. The lowering effect of Si is more appreciable within the 400 to 1000C range when the alloy has a high Al content. The effect of the composition on the thermoelectromotive force may serve as a basis for the production process of "CA" alloys. Orig. art. has: 12 figures and 2 tables

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut obrabotki tsvetnykh metallov, Moscow (State Scientific Research and Planning Institute for the Processing of Nonferrous Metals)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, EM

NR REF SOV: 004 OTHER: 000

Card 2/2

L 4537o-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4/Pad IJP(c)
JD/HW

ACCESSION NR: AP5007001 S/0129/65/000/003/0017/0022

AUTHOR: Puckhov, B. I.; Rakhshtadt, A. G.; Rogel'berg, I. L.; Gavze, A. L.

TITLE: Hardening of copper and nickel alloys during prerecrystallization annealing, and softening with repeated deformation

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1965, 17-22, and insert facing p. 25

TOPIC TAGS: metal hardening, metal softening, anisotropy, metal physical property, plastic deformation

ABSTRACT: The article discusses the effect of repeated deformation (carried out after prerecrystallization annealing) on the hardness of metals and alloys and their resistance to small plastic deformations. Nonremelted electrolytic nickel, a single-phase alloy (aluminum bronze with 7% Al), and a two-phase precipitation hardening alloy (beryllium bronze) containing 2.53% Be and 0.31% Ni were studied. Strips of the alloys were rolled, subjected to prerecrystallization annealing, and repeated deformation (rolling) with different degrees of work hardening. Hardening and softening were evaluated from changes in hardness and tensile strength, and

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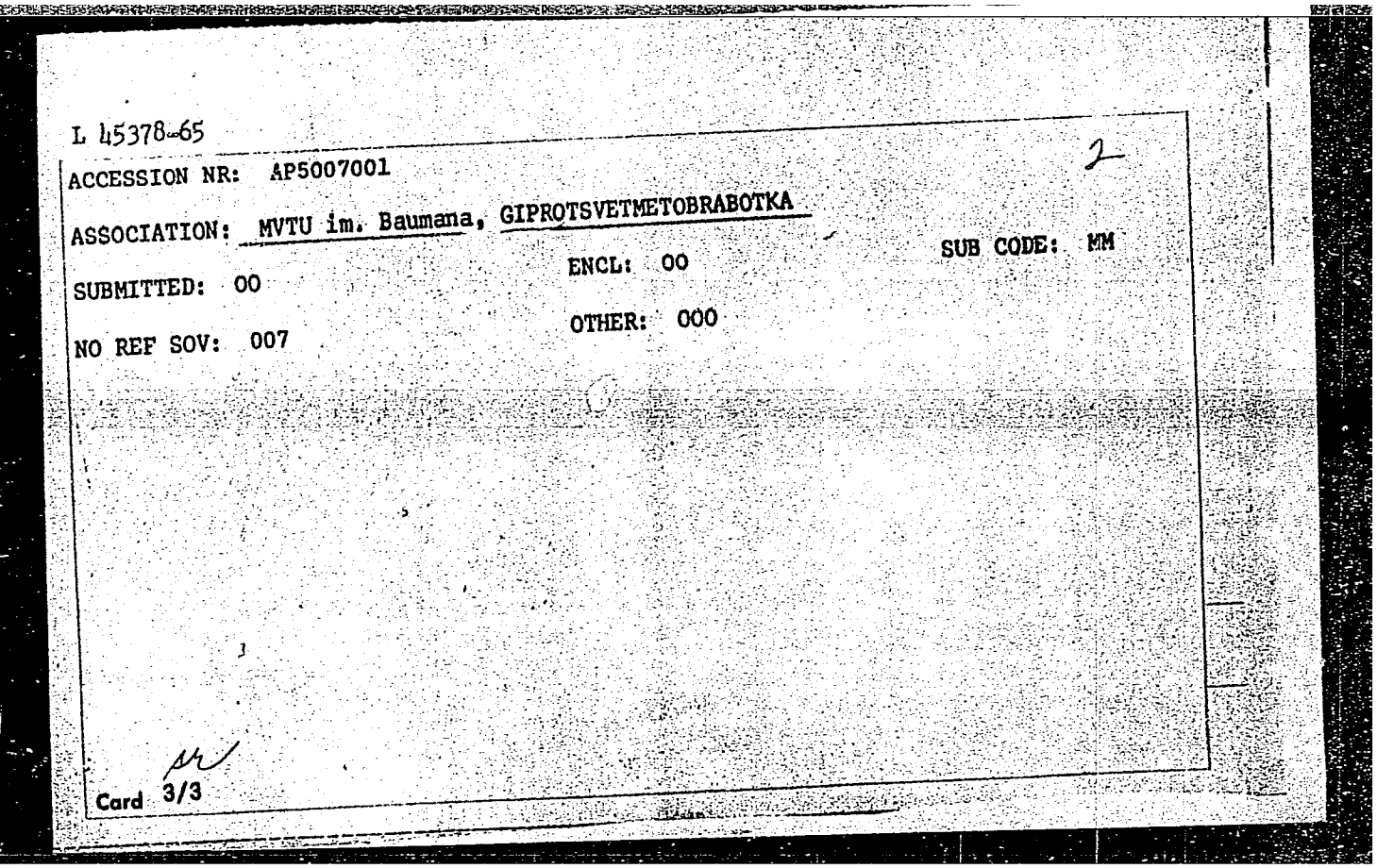
L 45378-65

ACCESSION NR: AP5007001 O

softening was measured on specimens cut at different angles to the direction of rolling. Repeated deformation was found to cause considerable softening in all cases. Softening was most apparent in the fall-off of resistance to small plastic deformations. Repeated plastic deformation in the direction of the initial deformation raises the elastic limit, but does not change the anisotropy of the elastic limit. A change in the direction of the repeated deformation changes this anisotropy by increasing the hardening in some directions and softening the alloy in others. Repeated plastic deformation of alloys following the initial deformation and prerecrystallization annealing causes softening in all directions, but to different degrees. The type of anisotropy depends on the direction of the second deformation with respect to the first. The Konobeyevskiy-Rovenskiy effect is based on the fact that polygonization appears during prerecrystallization annealing and breaking up of the polygonized substructure during repeated deformation. This effect is general and inherent for both pure metals and alloys; changes in the fine structure of alloys are complicated by redistribution of component atoms, and therefore these changes have a more pronounced effect on softening and hardening in alloys. Orig. art. has: 4 figures.

Card 2/3



L 45378-65

ACCESSION NR: AP5007001

2

ASSOCIATION: MVTU im. Baumana, GIPROTSVETMETOBRABOTKA

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 007 OTHER: 000

Card 3/3

L 45377-65 EWT(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(z)/EWP(b) Ps-4 IJP(c) MJW/JD

ACCESSION NR: AP5007002 S/0129/65/000/003/0022/0028

AUTHOR: Pastukhova, Zh. P.; Ivanova, T. V.; Puchkov, B. I.; Rakhshtadt, A. G.; Rogel'berg, I. L.

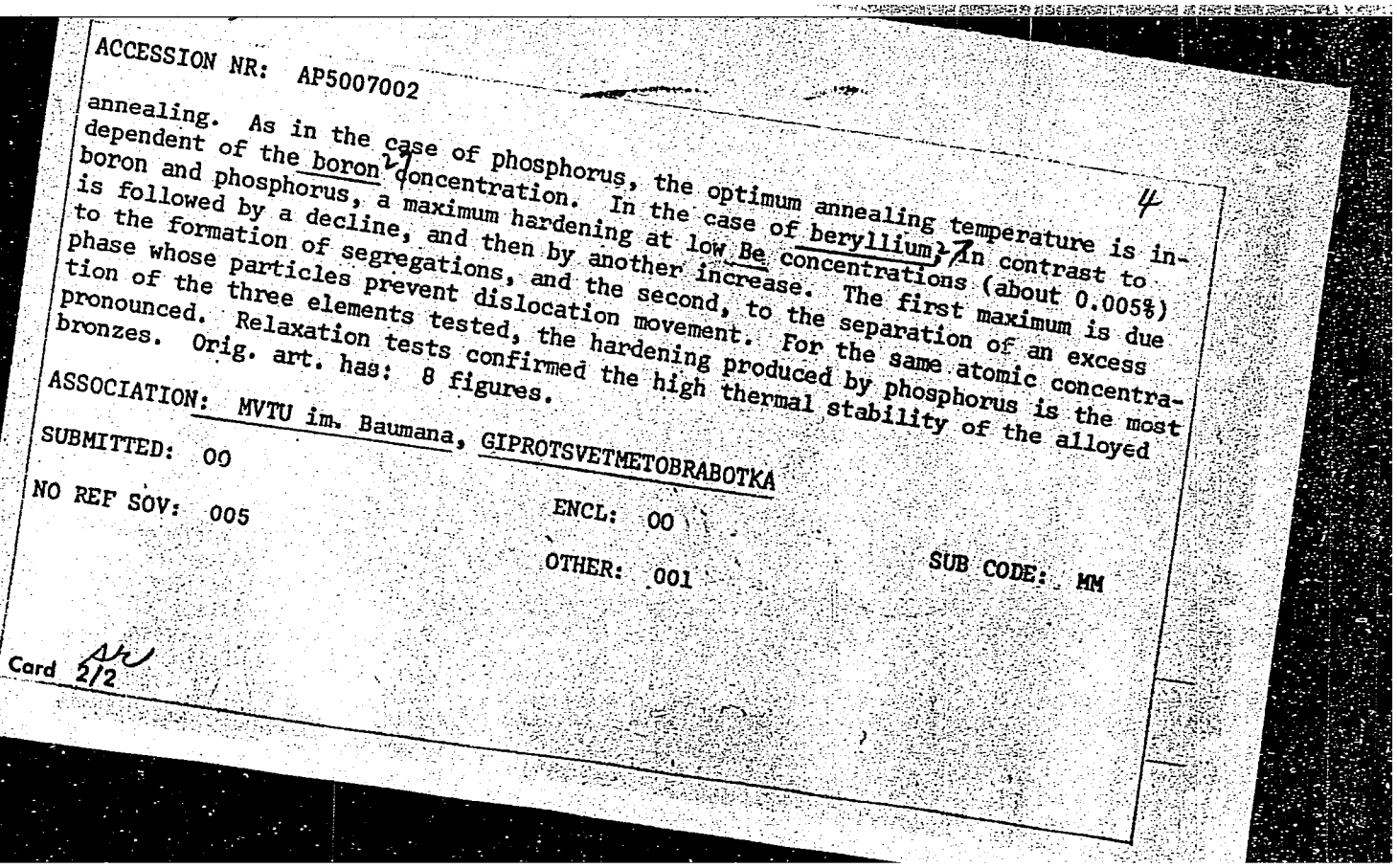
TITLE: Effect of microalloying on the properties of aluminum bronze

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1965, 22-28

TOPIC TAGS: aluminum alloy, aluminum bronze, hardening, mocroanalysis

ABSTRACT: The influence of microalloying on the properties of bronze Br.A7 after deformation and prerecrystallization annealing were studied. Phosphorus, boron, and beryllium were used as the alloying elements. The alloys contained 7% Al and 0.03, 0.07, 0.13% P; or 0.0053, 0.0095, 0.0188% B; or 0.0055, 0.009, 0.06% Be. From a deformed strip, specimens were prepared on which the elastic limit, relaxation resistance, and hardness were measured. The greatest effect of phosphorus on the properties of bronze is manifested after prerecrystallization annealing; the hardening produced is apparently due to the formation of segregations and even regions of excess phase. Introduction of boron increases the elastic limit only slightly, and the greatest hardening is also observed after prerecrystallization

Card 1/2



ACCESSION NR: AP5007002

4

annealing. As in the case of phosphorus, the optimum annealing temperature is independent of the boron concentration. In the case of beryllium, in contrast to boron and phosphorus, a maximum hardening at low Be concentrations (about 0.005%) is followed by a decline, and then by another increase. The first maximum is due to the formation of segregations, and the second, to the separation of an excess phase whose particles prevent dislocation movement. For the same atomic concentration of the three elements tested, the hardening produced by phosphorus is the most pronounced. Relaxation tests confirmed the high thermal stability of the alloyed bronzes. Orig. art. has: 8 figures.

ASSOCIATION: MVTU im. Baumana, GIPROTSVETMETOBRABOTKA

SUBMITTED: 00

NO REF SOV: 005 ENCL: 00

OTHER: 001 SUB CODE: MM

Card 2/2

FUCHKOV, B.I.; RAKHSHTADT, A.G.; ROGEL'BERG, I.L.; GAVZE, A.L.

Hardening of copper-nickel alloys during recrystallization annealing and recovery during repeated deformation. Metalloved. i term. obr. met. no.3:17-22 Mr '65. (MIRA 18:10)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im. Baumana i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov.

PASTUKHOVA, Zh.P.; IVANOVA, T.V.; PUCHKOV, B.I.; RAKHSHTADT, A.G.,
ROGEL'BERG, I.L.

Effect of additions alloys on the properties of aluminum bronze.
Metalloved. i term. obr. met. no.3:22-28 Mr '65.
(MIRA 18:10)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana
i Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut
splavov i obrabotki tsvetnykh metallov.

L 60216-65 EWT(d)/EWT(l)/EWT(m)/EPF(n)-2/EWA(d)/EWP(v)/EPR/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(h) Pz-6/Pf-4/Ps-4/Peb/Pu-4 IJP(c) JD/WW/JG/AT

ACCESSION NR: AP5019064 UR/0286/65/000/012/0089/0089

AUTHORS: Gil'dengorn, I. S.; Nuzhnov, A. G.; Pigidina, E. M.; Pokrovskaya, G. N.; Puchkov, B. I.; Rogel'berg, I. L.; Tarasova, T. F.

TITLE: Thermocouple. Class 42, No. 172087

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 89

TOPIC TAGS: thermocouple, precious metal, oxidizing medium, nickel, silicon, niobium, cobalt, manganese, carbon, magnesium, zirconium, calcium, lanthanum, cerium, boron, electrode

ABSTRACT: This Author Certificate presents a thermocouple based on precious metals and intended for use in oxidizing media. To increase its longevity at temperatures up to 1300C, the negative electrode is made of nickel with 2.5-7.0% of silicon and 1.5-5.0% of aluminum, while the positive electrode is made of a nickel alloy with 8-11% of chromium and 2-4% of silicon. Silicon may be fully or completely replaced by niobium. The electrode alloys may also be augmented with (singly or jointly) cobalt and manganese (up to 1%), zirconium (up to 0.2%), carbon and magnesium (up to 0.15%), calcium and lanthanum (up to 0.1%), cerium and boron (up to 0.01%).

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L 60216-65
ACCESSION NR: AP5019064

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut splavov i obrabotki tsvetnykh metallov (State Scientific Research Institute of Alloys and Nonferrous Metals Treatment)

SUBMITTED: 25Mar64 ENCL: 00 SUB CODE: IE, MM

NO REF SOV: 000 OTHER: 000

Card 2/2

L 11545-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) MJW/JD

ACC NR: AP5028961 SOURCE CODE: UR/0119/65/000/009/0017/0020

AUTHOR: Mishkevich, R. I. (Candidate of technical sciences); Puchkov, B. I. (Engineer); Rakhshtadt, A. G. (Doctor of technical sciences); Rogel'berg, I. L. (Candidate of technical sciences)

ORG: none

TITLE: Relaxation resistance of spring alloys

SOURCE: Priborostroyeniye, no. 9, 1965, 17-20

TOPIC TAGS: stress relaxation, brass, bronze, copper base alloy, annealing, metal test

ABSTRACT: The results of an experimental investigation of the relaxation resistance of copper-base alloys under stress and after low-temperature annealing are reported; the alloys were tested at room temperature and heated up to 100—200C. Ribbons 0.25—0.30-mm thick of these brasses and bronzes were tested: L62, L85, L80, L68, Br.OF6,5-0,15, Br.OF4-0,25, Br.OTs.4-3, Br.A7, Br.KMTs 3-1, MNTs 15-20. Test curves and tabulated data permit drawing these conclusions: (1) Stress relaxation of principal copper-base alloys used in instruments was

Card 1/2 UDC: 620.17:62.272:669.35

L 11545-66

ACC NR: AP5028961

determined at 20C for 50000 hrs and at 100—200C for 300 hrs; (2) Low-temperature annealing of all alloys except Br.OF4-0,25 bronze materially enhances the relaxation resistance at 20C; the highest relaxation resistance was found in Br.KMTs 3-1, Br.OTs.4-3, and nickel silver; (3) The low-temperature annealing also enhances the relaxation resistance of hot alloys; (4) The MNTs 15-20 alloy exhibited a highest relaxation resistance with and without the low-temperature annealing; other alloys are unfit for using in springs that work at higher temperatures. Orig. art. has: 8 figures and 2 tables.

SUB CODE: 11 / SUBM DATE: none / ORIG REF: 001

HW

Card 2/2

ROGEL'BERG, I.L.; SHPICHINETSKIY, Ye.S.; AGAFONOV, A.K.; PUCHKOV, B.P.

Some properties of oxygen and sulfur-bearing nickel for anodes.
Trudy Giprotsvetmetobrabotka no.18:243-253 '60. (MIRA 13:10)
(Nickel--Metallography) (Electrodes, Nickel)

M-4

USSR / Cultivated Plants. Potatoes, Vegetables, Melons.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58588

Author : Puchkov, P. S.
Inst : Institute of Potato Economy
Title : The Effect of Vernalization on the Yield and Quality of Potato Tubers

Orig Pub : Vest. s.-kh. nauki, 1957, No 8, 139-142

Abstract : Experiments were carried out at the Institute of potato economy in 1951-1953 with the following varieties: Epron (early), Ukhtomskiy (middle early), Peredovik (middle ripe), Lorkh (middle late), Vol'tman (late). Potatoes were vernalized for 40 days. The best increases in yield were obtained during 1952-1953 with the varieties Peredovik, Lorkh and Vol'tman. The increments due to vernalization in the case of the early Epron variety were higher in earlier periods. The effect of vernalization

Card 1/2

USSR / Cultivated Plants. Potatoes, Vegetables, Melons. M-4

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58588

on the Peredovik, Lorkh and Vol'tman varieties was higher in late harvesting periods. The vernalization of earlier varieties produced better results in a dry year, such as 1951, than in more favorable years. The increase in weight of the tuber caused by vernalization was highest in the case of Peredovik and Lorkh varieties. Greater increments of starch were observed in the Lorkh and Vol'tman varieties. The increments were smallest in the case of the Peredovik, Epron and Ukhtomskiy varieties. The greatest increments produced by vernalization were obtained in July-August. -- M. F. Sokolova

Card 2/2

PUCHKOV, B. S.: Master Agric Sci (diss) -- "The responsiveness to yarovization of potato varieties with various maturation dates". Leningrad, 1959. 18 pp (Min Agric USSR, Leningrad Agric Inst), 120 copies (KL, No 12, 1959, 130)

PUCHKOV, F.Ya.; VORONTSOV, I.M.

Connection of the reduction gear shaft with the driving shaft of the UKB-2 conveyer. Torf.prom. 31 no.7:28-29 '54. (MLRA 7:11)

1. Chernoramenskoye torfopredpriyatiye.
(Conveying machinery)

FUSHKOV, G.G.

Magnetotelluric fields in an anisotropic medium. Geol. i geofiz. no.7:68-81 '65. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

PUCHKOV, G.G.; RABINOVICH, B.I.

Interpretation of vertical electric logging curves of the type H ($\rho_3 \to \infty$) by means of auxiliary nomograms. Geol. i geofiz. no.4:123-129 '60. (MIRA 13:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.
(Electric prospecting)

L 20167-66 EWT(1)/ECC GW SOURCE CODE: UR/0210/65/000/009/0110/0126

ACC NR: AP6012052

AUTHOR: Puchkov, G. G.

ORG: Institute of Geology and Geophysics, Siberian Department, AN SSSR, Novosibirsk (Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR)

TITLE: Methods for determining linear correlation coefficients for magnetotelluric fields

SOURCE: Geologiya i geofizika, no. 9, 1965, 110-126

TOPIC TAGS: correlation function, magnetic field, telluric current, electric impedance, graph theory, linear function

ABSTRACT: In the case of a plane incident wave, the recorded components of the magneto-telluric field are related as follows:

$$\dot{E}_x = \dot{a}\dot{H}_x + \dot{b}\dot{H}_y;$$
$$\dot{E}_y = \dot{c}\dot{H}_x + \dot{d}\dot{H}_y;$$
$$\dot{I} = \dot{a}\dot{d} - \dot{c}\dot{b}.$$

This paper presents details on testing of new graph-analysis methods for determining the values of the impedances $\dot{a}$, $\dot{b}$, $\dot{c}$, $\dot{d}$. In essence, the methods described involve use of the properties of linear transformations to convert a straight line into a straight line and a circle into a circle. The proposed methods make it possible to obtain more stable values of additional impedances and give clearer criteria for

UDC: 550.38+550.838

Card 1/2

Card 2/2

L 20467-66

ACC NR: AP6012052

rejecting variations not conforming to the linear law. In particular, it is recommended that there be further testing of the described "circles" method, which is a combination of the straight lines-polarization vectors method. The "straight lines" method is recommended for a case when it is difficult to select H_y/H_x (H_x/H_y) polarization vectors in the limits of 360°. The "straight lines" method can be used for conversion from elliptical to plane polarization of the magnetic field. Orig. art. has: 26 figures, 18 formulas, and 5 tables. [JPRS]

SUB CODE: 20, 12 / SUBM DATE: 03Sep64 / ORIG REF: 001

Card 2/2

L 56648-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-7 IJP(c)
ACCESSION NR: AP5011867 UR/0120/65/000/002/0021/0025

AUTHOR: Kazanskiy, G. S.; Mikhaylov, A. I.; Puchkov, G. P.; Tsarenkov, A. P.; Chekhlov, K. V.

TITLE: Investigation of the possibility of accelerating particles at multiple resonance frequencies in a 10-Gev proton-synchrotron

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 21-25

TOPIC TAGS: particle acceleration, proton synchrotron

ABSTRACT: The increased efficiency of the locking-into-synchrotron regime, the acceleration with one electrode, and the improved shape of a secondary-particle beam when the primary beam is quickly extracted by means of a higher-harmonic acceleration, are theoretically analyzed. The third harmonic is selected as the most favorable. An experimental verification at $3f_{ol}$ = 613 kc and 13.5 kv on the resonance circuit showed that: the locking into acceleration increases by 30%; the

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L 56648-65
ACCESSION NR: AP5011867

rate of particle loss in the first acceleration stage decreases by 30—40% (thus, the intensity becomes higher by 1.5—2 times); the effect of the resonance with a 1800-cps magnetic-field ripple harmonic is eliminated as the phase-oscillation frequency is increased to 2500 cps. Further improvement in the proton-synchrotron operation is seen in a stepping up of the injection energy from 10 Mev to 30 Mev. "In conclusion, the authors wish to thank these workers of the Electronic Division who took part in carrying out the experiments: V. I. Prokof'yeva, V. A. Shtyrlyayev, Yu. M. Starikov, Z. S. Starikova, N. N. Blinnikov, V. F. Golembevskiy, and G. A. Bokov." Orig. art. has: 4 figures and 16 formulas.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: 05Feb64 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 002

Card 2/2

L 58986-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-7 IJP(c)

ACCESSION NR: AP5019020 UR/0286/65/000/012/0044/0044
621.384.6

37
Ic
B

AUTHOR: Kazanskiy, G. S.; Puchkov, G. P.

TITLE: A method for compensating resonance buildup of synchrotron vibrations in a beam of particles accelerated on a synchrophasotron. Class 21, No. 171942

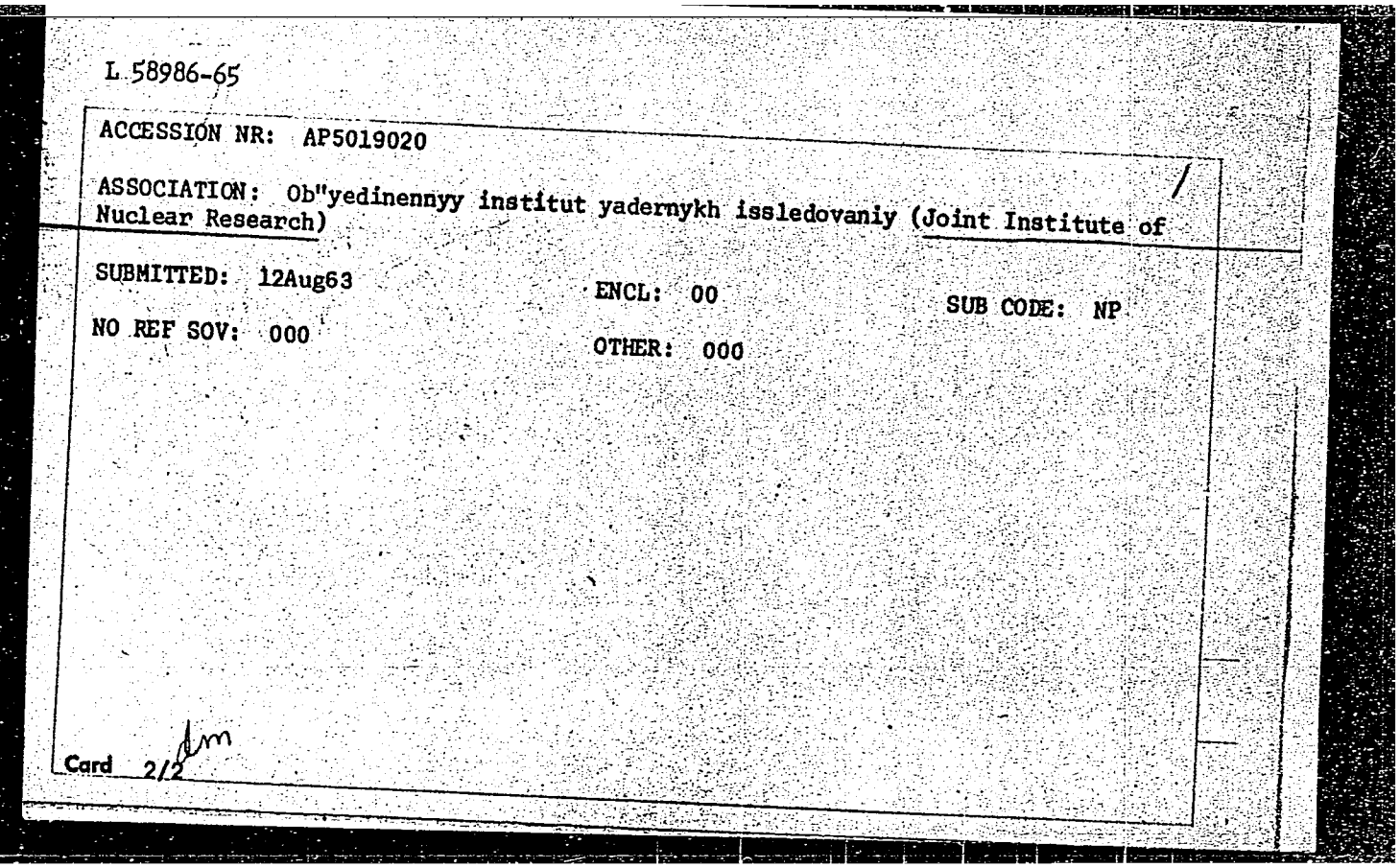
19

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 44

TOPIC TAGS: synchrophasotron, particle accelerator

ABSTRACT: This Author's Certificate introduces a method for compensating resonance buildup of synchrotron oscillations caused by the harmonics of pulsation in the magnetic field in a beam of particles accelerated on a synchrophasotron. The method is designed for increasing the intensity of the beam at the output of the synchrophasotron and for operation at a low acceleration voltage. A signal is used which is proportional to the amplitude of the pulsations in the magnetic field of the synchrophasotron for creating an antiphase perturbation in the voltage amplitude to compensate for the effect which the pulsations in the magnetic field have on the beam of accelerated particles.

Card 1/2



L 58986-65

ACCESSION NR: AP5019020

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 12Aug63 ENCL: 00 SUB CODE: NP

NO REF SOV: 000 OTHER: 000

Card 2/2

PUCHKOVA, Lidiya Vasil'yevna; PUCHKOV, Georgiy Vasil'yevich; KILLEROG, N.M., red. izd-va; LISOVETS, A.M., tekhn. red.

[Invertebrate pests of stored grain and grain products; a brief guide] Bespozvonochnye - vrediteli zerna i zernovykh produktov; kratkii opredelitel'. Kiev, Izd-vo Akad. nauk USSR, 1962. 31 p. (MIRA 15:7)

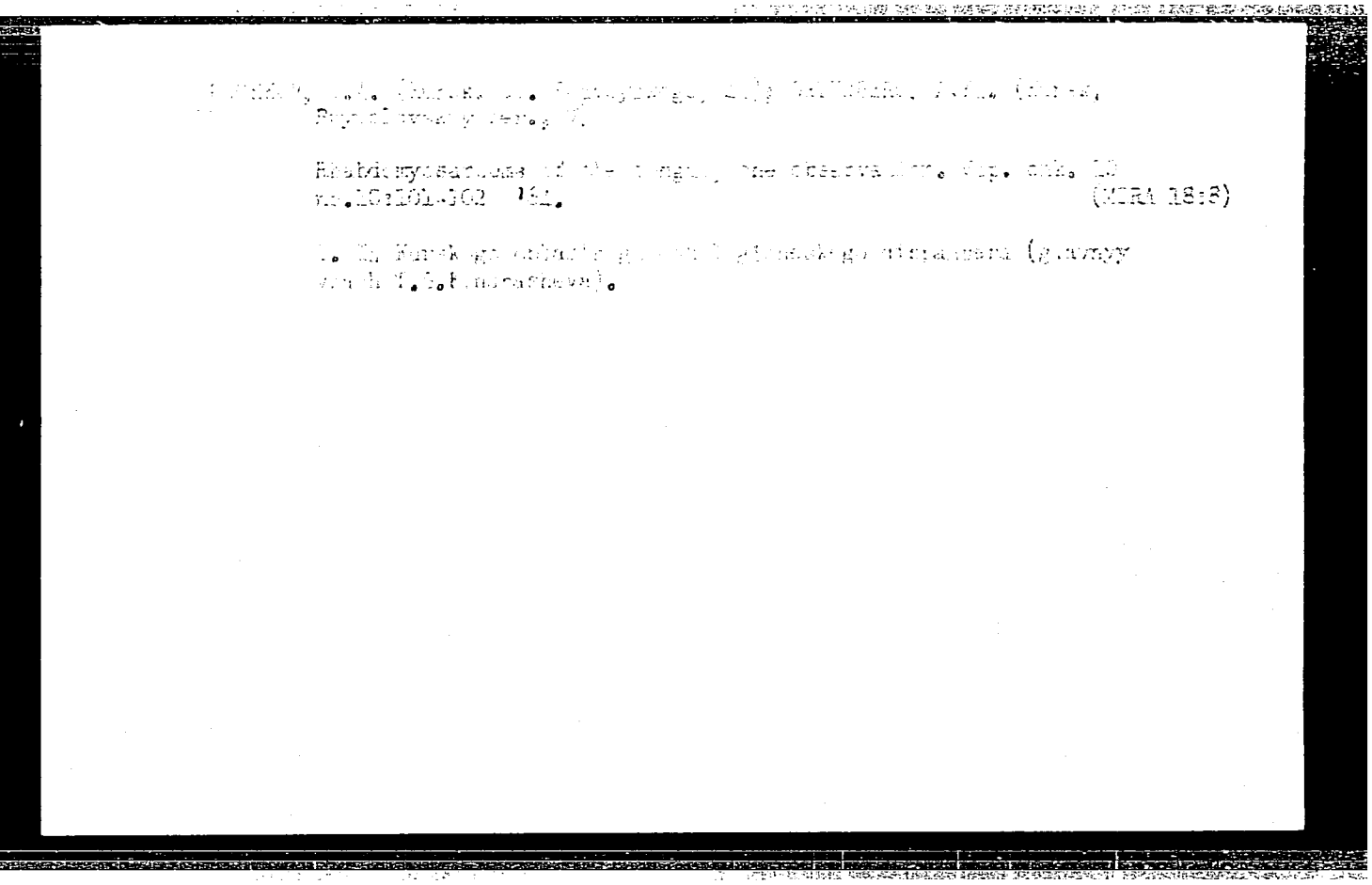
(Grain--Diseases and pests)
(Insects, Injurious and beneficial)

PUCHKOV, I., inzh.; BORCHENKO, P., inzh.

At meat plants of the Lithuanian S.S.R. Mias. ind. SSSR 29 no. 4:24-25 '58. (MIRA 11:8)

1. Upravleniye myasnoy i molochnoy promyshlennosti sovnarkhoza Litovskoy SSR.

(Lithuania--Packing houses)



VOLKOV, A.V.; KOLOSOVA, Yu.A.; KULAGIN, G.D.; MUKHIN, A.I.; POPOV, K.M.; PUCHKOV, I.B.; TIKHOMIROV, V.P.; CHERNIKOV, G.P.

Petr Ivanovich Glushakov, obituary. Izv. AN SSSR. Ser. geog. no.5:151 S-O '61. (MIRA 14:9)
(Glushakov, Petr Ivanovich, 1893-1961)

ASOYAN, N.S.; GAVRILOV, N.I.; GORNUNG, M.B.; KREMEN', K.S.; OLEYNIKOV, I.N.; PUCHKOV, I.B.; CHERNIKOV, G.P.; SHURAN, Ye.M., red.; ZABIROV, B.Sh., red.; KUZNETSOV, A.D., tekhn. red.

[Wast Africa; 1:5 000 000] Zapadnaia Afrika; 1:5 000 000. Moskva, Geografizdat, 1961. fold.map. ___[Text] 45 p. (MIRA 15:7)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.

(Africa, West--Maps)